

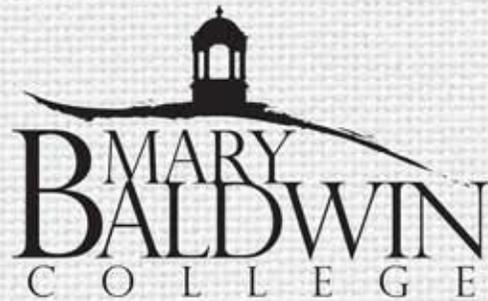
10TH
ANNUAL

THE SHOWCASE OF UNDERGRADUATE RESEARCH,
SCHOLARSHIP, AND CREATIVE ACTIVITY AT MARY BALDWIN COLLEGE

SENIOR PROJECTS • HONORS PROJECTS • SPECIAL PROJECTS

MAY 7, 2015

CAPSTONE FESTIVAL



PARTICIPANTS IN THE CAPSTONE FESTIVAL HAVE BEEN NOMINATED BY THE FACULTY BASED ON THE HIGH QUALITY AND ORIGINALITY OF THEIR WORK AND HAVE ACCEPTED NOMINATION.

CAPSTONE FESTIVAL

In the early days of Mary Baldwin Seminary, a Capstone Festival of sorts existed.

“All final examinations were held in public and members of the Board of Trustees and the townspeople attended to view students parse sentences, do intricate math problems, and recite soliloquies,” writes Professor Emerita of History Patricia H. Menk in her book *To Live in Time: The Sesquicentennial History of Mary Baldwin College 1842–1992*.

By the late 1800s, the practice of public recitations had disappeared. In 2006, Mary Baldwin College inaugurated a new Capstone Festival.

At each year’s festival, a select group of students, nominated by faculty, present their senior, honors, and special undergraduate research projects to the MBC community and the general public. The high quality and breadth of research, scholarship, and creative activities on display is a testament to the legacy of those earlier years and a celebration of our future.

The Festival is sponsored by the Advisory Board of Visitors, the Office of Sponsored Programs and Undergraduate Research, the Global Honors Scholars Program, and the Committee on Research, Scholarship, and Creative Activity.

FESTIVAL PARTICIPANTS



CEARA ARMSTRONG

Project Advisors: Amy Tillerson-Brown and Mary Hill Cole

Academic Advisor: Amy Tillerson-Brown

Type of Project: Senior Project

Presentation Category: Multi-media presentation

Title: "Playing God:" *Buck v. Bell* and U.S. Compulsory Sterilization

Abstract: The Virginia Racial Integrity and Sterilization Acts of 1924 allowed people, primarily wealthy men, to "play God" by controlling the reproductive abilities of their fellow citizens. The justification for the forced sterilization of Carrie Buck, an Albemarle County native, as decided by the Supreme Court in 1927, was influenced heavily by Progressive Era thought. The use of pseudoscientific criteria that established a social hierarchy ultimately led to an increase in sterilizations nationwide. *Buck v. Bell* established the legal precedent for compulsory sterilization. The practice of forced sterilizations across the United States allowed one group of influential individuals to deprive and prohibit reproduction of those they deemed unfit.

Biography: Ceara Armstrong is a history major with a minor in elementary education. She is from Churchville, Virginia, and is currently working towards her Master's of Arts in Teaching at Mary Baldwin College. After graduating with her Master's in 2016, Ceara plans to teach for a few years before working toward her dream of becoming an elementary school administrator.



OLIVIA ARNOUX

Project and Academic Advisor: Paul Deeble

Type of Project: Senior Project

Presentation Category: Poster

Title: The Effects of Rapamycin on *Drosophila melanogaster* When Exposed to Heat and UV Radiation

Abstract: Aging is complex;

despite this complexity, however, it is important to understand cellular signaling mechanisms that can impact survival. Members of the species *Drosophila melanogaster*, commonly known as fruit flies, share with humans about 75% of the genes that cause disease. Lifespan in this organism is relatively short, making it an ideal model to study aging, and various stresses reduce their lifespan. The Target of Rapamycin (TOR) pathway has been shown to match growth to nutrient status and therefore play a role in aging. This work examines the effects of the

drug rapamycin on extending the life span of *Drosophila melanogaster* under the stress conditions of heat and ultraviolet light radiation. Results indicate that under these stressed conditions, rapamycin treatment extends the lifespan of *Drosophila melanogaster* when compared to untreated flies. In conclusion, rapamycin inhibits the TOR pathway from performing its functions, and despite stresses, the lifespan of *Drosophila melanogaster* increases compared to untreated flies.

Biography: Olivia Arnoux is a biology major from Glenn Dale, Maryland. She will be taking a year off to work and to complete additional coursework. She plans to attend a graduate physician assistant program in the fall of 2016.



JAELYNN BENNETT

Project Advisor: Daniel Stuhlsatz

Academic Advisor: Douglas Davis

Type of Project: Honors Thesis

Presentation Category:

Delivered paper

Title: The Impact of the

Criminal Justice System on the

Black Community in Virginia: A Case Study of Michelle Alexander's *The New Jim Crow*

Abstract: The criminal justice system has had a significant impact on the African American community, particularly during segregation and today with mass incarceration. In her recent book *The New Jim Crow*, civil rights attorney Michelle Alexander contends that mass incarceration is a new "system of racialized control that is similar to the previous systems of control, slavery and Jim Crow, but is occurring during what society considers an 'age of colorblindness'." My thesis considers the extent to which Alexander's argument, which is specific to the United States, applies to Virginia. Points of comparison include the role of prison, "invisible punishment," debtors' prison, employment discrimination, felon disenfranchisement, and public assistance discrimination. Critical theory, critical race theory and critical theories of race and racism are used to explain the findings. The results of this case study show that Virginia is similar in many ways to the United States in the impact of the criminal justice system on the African American community, but with some significant differences.

Biography: Jaelynn Bennett is a criminal justice major with an African-American studies minor and was elected to Phi Beta Kappa. Her hometown is Gloucester, Virginia. Jaelynn's career goal is to become an attorney specializing in civil rights law. She plans to attend law school in the Fall of 2016.



KATHARINE BRINLEY BROOMFIELD

Project Advisor: Cara Jones

Academic Advisor: Laura van Assendelft

Type of Project: Senior Project

Presentation Category: Multi-media presentation

Title: The Luckless State: Modernization and Social Movement Politics in Russia's Failed Revolution

Abstract: This project examines the causes and outcomes of the Russian Revolution and argues that it is an example of a failed revolution in that it did not satisfy the following criteria: expansion of state capacity; significant modernization and economic growth; and establishment of basic socio-political rights. First, I provide a brief overview of social movement theory and revolutionary analysis. I then compare and contrast the economic and political power structures of Russia with the historical circumstances of similarly historically situated European powers. I discuss how the unique manifestation of power and the struggles of Russian modernization were fundamental to derailing the intentions and desired outcome of the revolution, resulting in its ultimate failure as a tool for meaningful change. This section illustrates how the pre- and post-revolutionary geographical, economic, and political landscape of Russia created an environment in which a radical change of the status quo was made impossible. Finally, I consider the aftermath of the revolution as it pertains in particular to the lasting political and economic status of Russia throughout the 20th century and into the modern day.

Project and Academic Advisor: Edward Scott

Type of Project: Senior Project

Title: In Finitude: Authenticity and the Existential Paradigm in Heidegger and Tolstoy

Abstract: In this study, I show that Tolstoy, in his novella *The Death of Ivan Ilyich*, and Heidegger, in his magnum opus *Being and Time*, came to the same understanding of the nature of finitude and its critical role in the development of an authentic self. I analyze Heidegger's philosophy of being as an existential paradigm, focusing on the concepts of *Dasein* and *Das Man*, being-towards-death and inauthenticity. I then review the essential connection between these concepts and Tolstoy's illustration of anxiety as an emergence of authenticity in his title character, Ivan Ilyich. Finally, I provide a summative review of existential analysis as it presents in both philosophers' works and conclude with an extrapolation of its relevance to the necessary philosophical critique of everydayness in present discourse.

Biography: Katharine Brinley Broomfield is a dual political science and philosophy major from Colorado Springs, Colorado. She is currently considering summer options in international affairs research and will be applying to graduate schools in the fall.



BREANNAH CARR

Project and Academic Advisor: Daniel Stuhlsatz

Type of Project: Senior Project

Presentation Category: Presentation with multi-media support

Title: Under What Social Conditions Does Police Use of

Lethal Force Occur?

Abstract: Police use of excessive force, including lethal force, has been a major public issue since the 1960s and 1970s, when urban riots caused a rise in civilian killings. Today, police use of lethal force is a popular topic of debate for many scholars. This study looks at the complex relationship between economic inequality and police use of lethal force. Conflict theory is used as a theoretical framework to understand the relationship between variables; under this framework, greater levels of state coercion are expected in areas with higher inequality. Since limited data are publicly available on police use of lethal force, this study also focuses on assessing the Supplementary Homicide Report and Vital Statistics of the United States for their ability to provide comprehensive and accurate data. Results indicate discrepancies between the data sets, which raises questions about how much we really know about police use of lethal force against our own citizens in America.

Biography: Breannah Carr is a sociology/psychology major from Pearisburg, Virginia. In the fall, Breannah will be entering a Ph.D. program in sociology at North Carolina State University; her research interests include inequality, crime, deviance, and social control.



KENIA CASTRO

Project Advisor: Daniel Métraux

Academic Advisor: Cara Jones

Type of Project: Senior Project

Presentation Category: Presentation with multi-media support

Title: The DREAM Act Protests: The Fallen Tree That Made No Sound

Abstract: For more than a decade, the Development, Relief, and Education for Alien Minors Act (DREAM Act) has given hope to millions of undocumented youth residing in the United States. This act would provide a

pathway to citizenship via higher education or military participation. After years of legislative limbo, it has become more difficult to pass the act, and efforts of activists and supporters have seemingly diminished and gone unnoticed in the eyes of the public and the United States government. After researching and analyzing the leaders, political and social climate, and tactics of groups and organizations present during the Civil Rights and United Farm Workers' movements, it becomes apparent that "Dreamers" (beneficiaries of the DREAM Act) can follow and practice similar measures that will increase the possibility of Congress enacting the DREAM Act. These two 20th century movements can ultimately serve as foundations to develop and pursue the achievement of Dreamers' goals.

Biography: Kenia Castro is a political science major. She is a student-athlete and a peer advisor for the Latino Culture Gateway on campus. Originally from Dallas, Texas, she aspires to work in international affairs and public policy. She looks forward to attending graduate school in Texas.



ALLYSON CLINE

Project and Academic Advisors: Mary Hill Cole and Amy Tillerson-Brown

Type of Project: Senior Project
Presentation Category: Delivered paper

Title: The Chernobyl Meltdown of April 26, 1986: How the Soviet

Union Created a Radioactive People

Abstract: The Chernobyl powerplant meltdown of April 26, 1986, forever changed the Soviet Union and its people. To this day, people are dying from the radiation that is still present in Ukraine, Belarus, and parts of Russia. The Soviet-era government was greatly at fault for the destruction. The way the Soviet government reacted and responded to this tragedy made it the worst nuclear disaster in history. This event was so destructive that it is deemed as the inciting event of the downfall of the Soviet Union.

Biography: Allyson Cline is a history major and an education minor. She is from Carlisle, Pennsylvania. Allyson plans to teach high school social studies in Pennsylvania while she works on her Ph.D. in history; she aspires to become a history professor.



HAYDEN CLORE

Project Advisor: Daniel Stuhlsatz

Academic Advisor: Carey Usher

Type of Project: Senior Project
Presentation Category:

Delivered paper

Title: Re-integration Programs and Their Effect on Recidivism

Abstract: Releasing an offender

from prison or jail involves much more than the act of release. Being released is the start of a complicated process that is built on an equally complicated set of policies and social conditions. The process of re-entry of offenders back into mainstream society has been devalued for many years and often thought to be an unimportant event. Recidivism, the process of relapsing back into criminal behavior after being released from prison, is measured by documenting if an offender commits a criminal act that results in re-arrest, re-conviction or return to prison, with or without a new sentence, during the three-year period following his or her release from prison. Hayden conducted a literature review of existing re-integration programs and how they affect recidivism rates. Results indicate that re-integration programs help tie offenders to the community and others around them, which reduces recidivism rates. The services offered by these programs meet the core needs of offenders trapped in the cycle of recidivism.

Biography: Hayden Clore is a sociology major and criminal justice minor from Yorktown, Virginia. In the fall, Hayden plans to enter the criminal justice field as a correctional officer.



MORIAH H. COLEMAN

Project and Academic Advisors: Marlena Hobson and Sara Nair James

Type of Project: Senior Project
Presentation Category:

Presentation with multi-media support

Title: Why French Surrealists Would Be Gamers: How Surrealism Influences Modern Game Design

Abstract: In his manifestos, published in 1924 and 1929, André Breton suggests that the function of Surrealism is to make physical the thoughts that are otherwise unreachable or deeply embedded in the subconscious. Breton suggests a number of methods by which to attain this knowledge, including paying special attention to dream images, the imaginations of children, and the speech of the insane. Narratives from many video games

in the survival horror genre, such as *Silent Hill 2*'s twisted vision of a West Virginian coal mining town shaped by the unconscious minds of its visitors, reflect a connection with Breton's writing, depicting Surrealism as the mental journey through which one might experience revelations about one's own mind. Dreams feature heavily in many of the games, as do the imaginative worlds of children. Also present in the narratives of many games in the genre is a deeply passionate interest in the mentally ill. All of these methods appear in the video games to construct narratives about the landscapes of a character's mind. Dreams, delusions, and confused wanderings through fantastic and horrible environments all tie back into Breton's writings on Surrealism. Examination of the worlds constructed for these games also reveal striking similarities to those created by Surrealist painters such as Salvador Dali and precursors such as Giorgio de Chirico. It is clear that these video games have heavy ties with Surrealism and that their developers drew inspiration from the movement.

Biography: Moriah Coleman is an art history major from Pulaski, Virginia. She intends to continue into graduate school to pursue both an interest in video game design and research into the Austrian artist Alfred Kubin.



CORAL COLLINS

Project Advisor: Daniel Métraux

Academic Advisor: Lise Keiter

Type of Project: Senior Project

Presentation Category:

Delivered paper

Title: Accepting Cognitive

Dissonance: Japanese

Exclusivity, *Nihonjinron*, and the

Demographic Crisis in Japan

Abstract: Japan will be facing an impending demographic disaster in the upcoming decades. Immediate policy changes are needed to remedy fiscal and socio-political trouble, yet Japan has been hesitating to make the appropriate adjustments. The various social circumstances and cultural obstacles that have contributed to the crisis are both physical and mental. Leading up to this crisis and throughout the 20th century, contemporary Japanese nationalism and ideologies propagated through *nihonjinron* literature have created psychological impediments preventing Japanese society from accepting large-scale changes crucial to recovery and future success. In contrast to past incidences of social reform in Japan, the current crisis is not accompanied by a significant cultural upheaval, and thus the Japanese reaction has been less dramatic, in part due to the lack of radical action by the government. Before lasting, effective changes can be

applied, socio-cultural adjustments to current popular Japanese attitudes need to be made.

Biography: Coral Collins is an Asian studies major with minors in French and music. She lives in Stuarts Draft, Virginia. Coral was elected to Phi Beta Kappa and has had two essays and her thesis published in *The Virginia Review of Asian Studies*. Coral intends to begin graduate studies of Japanese culture and society following a year working in Japan.



RACHEL COX

Project Advisor: Louise Freeman

Academic Advisor: Jenna Holt

Type of Project: Senior Project

Presentation Category: Poster

Title: Using Applied Behavior Analysis with Reinforcers to Shape Male Asian Musk Shrew Behavior

Abstract: Primary and secondary reinforcers are commonly used in applied behavior analysis (ABA) research on rodents and domestic animals. The Asian musk shrew (*Suncus murinus*) is commonly studied in pharmaceutical research, but has been the subject of little or no ABA research. The current project focused on training motor behavior in the Asian musk shrew using primary (food) and secondary (auditory) reinforcers. Subjects were introduced to wet cat food and a manual clicker. The first sessions focused on introducing the primary reinforcer, while the second sessions paired the primary and secondary reinforcer. Two groups were created; Group A contained subjects that responded positively to the primary reinforcer, whereas Group B contained subjects with inconsistent responses. Group A and B were subsequently shaped on the same target behavior: going to the right back corner of the cage and staying for three to five seconds. All shrews were tested separately with reinforcement being contingent on behavior. As expected, Group A had higher frequencies of the behavior being demonstrated compared to Group B.

Biography: Rachel Cox is a psychology major with an emphasis in mental health. Her hometown is Springfield, Virginia. After graduation, she would like to gain more experience while working with children diagnosed with Autism Spectrum Disorder. Within a year she plans to enroll in a Master's program focusing on clinical psychology.



CHEYENNE CROWE

Project Advisor: Paul Deeble
Academic Advisors: Eric Jones and Mary Hill Cole
Type of Project: Senior Project
Presentation Category: Presentation with multi-media support

Title: The Synergistic Antimicrobial Effect between Aspirin and Tetracycline When Used in Combination to Treat *Escherichia coli* and *Staphylococcus epidermidis*
Abstract: Non-steroidal anti-inflammatory drugs (NSAIDs) are often taken together with antibiotics to combat fever and pain due to infection. This experiment tested the hypothesis that NSAIDs, when used in conjunction with an antibiotic, have a positive antimicrobial effect that surpasses that of an antibiotic alone. This was tested by finding a working minimum inhibitory concentration (MIC) for aspirin and tetracycline for both species of bacteria, *E. coli* and *S. epidermidis*, and then measuring the drugs' effects at different concentrations, first individually and then in combination. Data from the combined drug trials using *E. coli* indicated there is a synergistic effect that completely inhibited bacterial growth at 1X MIC, whereas the individual treatments had growth at that concentration. Data from the *S. epidermidis* trials do not show complete inhibition, but do show greater inhibition than either individual drug treatment. These results suggest that using tetracycline and aspirin together to inhibit bacterial growth is more effective than using tetracycline alone.
Biography: Cheyenne Crowe is a biology and history double major from Knoxville, Tennessee. In the fall, she will be attending East Tennessee State University, entering the geosciences program to study paleontology.



ALEXANDRA ELLMAUER

Project and Academic Advisor: Laura van Assendelft
Type of Project: Senior Project
Presentation Category: Presentation with multi-media support
Title: The Politics of Teacher Tenure in Public Education

Abstract: It has been over ten years since President Bush implemented No Child Left Behind, yet the United States still ranks 36th in the world in education performance. Currently, the American public and government appear to be shifting blame from academic curriculum to

teachers. Specifically, teacher tenure is being blamed for the failure of education reform. This paper uses Cobb and Elder's theory of agenda to help explain the current political climate surrounding teacher tenure. Analysis of interest groups, litigation, and media bias provide insight to how the scope, visibility, and intensity of the teacher tenure issue have increased over time. This paper provides insight to how tenure reached the government's agenda and how a policy that provides attractive job protection acquired negative backlash.

Project and Advisor: Bruce Dorries
Academic Advisor: Claire Kent
Type of Project: Senior Project
Title: Ms. Casting the Race?

Abstract: Broadcast media frameworks have challenged the campaigns of notable female politicians for decades by implying that women are inferior to their male opponents. Currently, only 19.4% of the federal legislature is female, which is highly unrepresentative of the American population as a whole. Using Gerbner's cultivation theory, this project explored potential correlations between political media's historic gender bias and the small number of women elected to public office. Content analysis of 698 local news clips covering five senatorial campaigns in 2014 was translated into quantitative data to identify specific details of broadcast news that may impact election results in favor of or against women candidates. The project offers modern insight into the status of female congressional candidates in the eye of the media.
Biography: Alexandra Ellmauer of Youngsville, New York, is a double major in political science and marketing communication. Alexandra was accepted to the University of Richmond School of Law, which she will be attending in the fall of 2015.



CHARLEEN FREDERICK

Project Advisor: Joseph Sprangel
Academic Advisor: Janet Ewing
Type of Project: Senior Project
Presentation Category: Presentation with multi-media support

Title: Looking Ahead: Southside Baptist Christian School in 2020 and Beyond
Abstract: The private education sector accounts for 24% of all U.S schools; however, these schools are finding themselves in financial difficulty due to enrollment decline. This research investigated the reasons for this sudden decline at Southside Baptist Christian School,

which has been in operation for 16 years. To identify the challenges that the school is facing, a strategic analysis was conducted, which revealed that the school will face financial hardships as a result of low enrollment numbers and increasing operational costs. The research also supports the premise that private schools will experience difficulties when financed solely by tuition. In order for Southside Baptist Christian School to continue to thrive and carry on its long-standing tradition of excellence, the school needs to promote its brand, improve its marketing strategy, and optimize all of its resources. By successfully implementing an improved marketing plan, the school will be able to improve their profits by at least 50%. This increase would enable the school to effectively fulfill and improve its vision and mission and continue its tradition of excellence.

Biography: Charleen Frederick is a business major with an emphasis in management and a minor in education. She is from Kingstown, St. Vincent. In the fall, Charleen will be teaching at Southside Baptist Christian School.



TAYLOR GIBLIN

Project Advisor:

Kimberly Craig

Academic Advisor: Heather

Macalister

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: The Effect of Alcohol on Creativity

Abstract: Alcohol is used widely in modern society for many reasons. Many great minds have used alcohol when pursuing creative endeavors of all genres. Alcohol was therefore associated with the creative process. This presentation looks at ongoing research concerning how alcohol relates to creativity and reviews studies that relate to the use, or perceptions about use, of alcohol to creative thinking and production of creative answers to problems. The results show that there are different kinds of creativity and alcohol affects them in different ways. Alcohol consumption has a positive effect on creativity when it requires original thought and a negative effect when it requires intelligent thought.

Biography: Taylor Giblin is a psychology major. She grew up in Cincinnati, Ohio, and currently lives in Virginia Beach, Virginia. She was recently accepted into the Disney College Program and will be working at Walt Disney World in Florida starting this August.



LEAH C. GRISER

Project Advisor: Katherine Low

Academic Advisor: Kenneth Beals

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: Faith, Feminism, and the Forests

Abstract: In 1979, French author Françoise d'Eaubonne published a work entitled "Le Féminisme ou la Mort" (Feminism or Death), in which she coined the term "ecofeminism." That same year in Reni, India, peasant women joined arms around the trees of their village forests to protect them from government-contracted felling. This demonstration was the beginning of what came to be known as the Chipko Andolan movement, literally meaning "embrace the tree." A similar movement also began in North America with a group of Benedictine Roman Catholic nuns, evolving into a decentralized network of women that are now commonly referred to as "green sisters." What both these contemporary groups of women share is that their devotion to the earth is planted, sprouted, and cultivated by their faith. This project creates a template for ecofeminism and applies it to these groups of tree-hugging Hindus and hippy nuns, to see how the entities of feminism, deep ecology, culture, politics, non-violence, spirituality and "lived religion" come together both in theory and practice to drive this world-wide movement of ecofeminism.

Biography: Leah Griser is a combined religion and philosophy major with minors in leadership studies, ministry, and peacemaking and conflict resolution. Griser is from Washington, D.C., and plans to obtain a Master of Divinity and become ordained in the Unitarian Universalist tradition, then go on to serve as a chaplain in the U.S. Army.



JORDYNN HEATHERINGTON

Project Advisor: Daniel Métraux

Academic Advisor: Cara Jones

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: Sex Trafficking: An International Issue and the

World's Best-Kept Secret

Abstract: Human trafficking is a major issue in international relations, responsible for billions of dollars in trade and thousands of human rights violations. It undergirds nearly every industry in the modern world. Yet, it is also

the world's best-kept secret, empowered by corruption practiced in and between sovereign states, and the limitations of scope and practice of international law. In this project, I address sex trafficking, the most widely practiced, documented, and reported form of trafficking. I discuss how corruption within the enforcement bodies enables victimization and recognize the difficulties of interpreting and defining specific laws combatting these human rights violations. Finally, I measure variations of success and failure in the practices to combat sex trafficking around the world.

Biography: Jordynn Heatherington is political science major from Oklahoma City, Oklahoma. Upon graduation, she will be a commissioned officer in the United States Army National Guard as an ordnance officer. She plans to pursue a Master's of Divinity at Oral Roberts University in hopes of becoming a military chaplain.



KATHLEEN HURLOCK

Project Advisor: Katherine Turner

Academic Advisor: Sarah Kennedy

Type of Project: Senior Project
Presentation Category: Delivered paper

Title: "Too Old to Be Agreeable, Too Young to Die": Social and Feminist Criticisms in Two 1790s Epistolary Novels

Abstract: Many late 18th century novels preached moral messages about women and sexuality. Particularly common was the "fallen woman" narrative, in which a woman commits improper sexual behavior, is socially rejected, and dies from disease or in childbirth. Some fallen women narratives, however, offer rather subversive ideas about women and class. This project examines Jane Austen's *Lady Susan* (written 1794, published 1871) and Hannah Webster Foster's *The Coquette* (1797), both of which seem to be morally conservative. However, *Lady Susan* uses blatant parody to satire the English aristocracy, while *The Coquette* more subtly questions the moral basis of a new nation (the post-revolutionary United States) and asks whether the new American ideal of a classless, free society will really work. In each novel, modifications of the "fallen woman" trope and the reactions of other characters to the female protagonist offer a critique of social morality.

Biography: Kathleen Hurlock is a senior English major with a minor in women's studies; she was elected to Phi Beta Kappa. She is from Hampton, Virginia, and hopes to attend graduate school for English in order to further her interest in women's literature.



KIMBERLY H. JACKUCHAN

Project and Academic Advisor: Paul Callo

Type of Project: Senior Project
Presentation Category: Poster

Title: Analysis of Parasite Transmission Between Summer

and Wintering Ground in a Common Migratory Song Bird
Abstract: The study of parasite-host relationships associated with avian malaria has been widely considered and researched due to its detrimental effects on avian communities. However, the location of primary transmission of this disease is not fully understood. Long-distance migrants, in particular, are of interest, as they have migratory routes that extend from the northeastern United States and Canada (the breeding grounds) all the way to South America (the wintering grounds). This study was thus conducted in order to determine where parasitic transmission is occurring. It was hypothesized that parasitic transmission occurs in the wintering grounds, in which case parasitic lineages would be common in all sampling locations. Using blood samples collected from Red-eyed Vireos (*Vireo olivaceus*) in Pennsylvania, Maryland and Virginia, Polymerase Chain Reaction (PCR), DNA sequencing, and phylogenetic testing was conducted. Results showed three lineages that were common in more than two sampling locations. This supports the hypothesis that parasitic transmission is occurring on the wintering grounds.

Biography: Kimberly Jackuchan is a biology major from Idaho Falls, Idaho. Following graduation, she plans to take a year off to work, travel and apply to graduate/veterinary schools. She dedicates her studies and accomplishments to her family, as their support has always motivated her to pursue her dreams.



AMANDA JOHNSON

Project Advisor: Katherine Turner

Academic Advisor: Kristen Egan

Type of Project: Senior Project
Presentation Category: Delivered paper

Title: Motherhood and Power in the Neo-Slave Narrative

Abstract: Motherhood is a prevalent theme in three notable neo-slave narratives: *Kindred* by Octavia Butler (1979), *Beloved* by Toni Morrison (1987), and *Wench* by Dolen Perkins-Valdez (2010). Motherhood causes a power struggle for the women in these novels, because it both

empowers and disempowers women within the confines of slavery. These neo-slave narratives focus on the plight of the mother in order to offer a new perspective on history through the articulation of this power struggle. By using a variety of literary tropes including abortion, infanticide, and sexual abuse, the authors show how women exercise power in a situation where many would expect them to be powerless. Ultimately, motherhood functions within neo-slave narratives to show how the bonds of slavery defined and disempowered enslaved women, yet offered them some degree of power and control.

Biography: Amanda Kate Johnson is a senior English major with minors in history, coaching, and education. She is from Southampton County, Virginia. After graduation, Amanda would like to pursue a career in higher education.



KAELA KELLY

Project Advisor: Karl Zachary
Academic Advisor: Maria Craig
Type of Project: Senior Project
Presentation Category: Poster
Title: Investigation of Aggregative Properties of the Antimicrobial Peptide LL-37 by Dynamic Light Scattering and Electrophoretic

Shift Mobility Assay

Abstract: The antimicrobial peptide LL-37 is part of the cathelicidin family, which plays a critical role in mammalian innate immune defense and has potential for combating bacterial infection and antibiotic resistance. LL-37 is known to induce cell death by disrupting the cell membrane by a combination of carpet and toroidal pore mechanisms. By studying peptide properties, such as aggregation, we may better understand how LL-37 induces cell death. We have used dynamic light scattering (DLS) and electrophoretic mobility shift assays (EMSA) to investigate the aggregative properties of LL-37. DLS measures diffusion of particles by illuminating particles with laser light and then analyzing fluctuations in the scattered light over time. In the concentration range of 37 to 150 μM , we observe by DLS that LL-37 shows increased aggregation as concentration increases, indicative of particle size transition from a hydrodynamic radius on the order of 1 to 1,000 nm. EMSA with peptide detection by western blotting provides information about aggregate size at lower concentrations, ranging from 0.8 to 50 μM . As a result, the particle size distribution shifts decisively in favor of relatively small aggregates as the concentration falls below 50 μM , indicated by the decrease in hydrodynamic radius in DLS and increased protein migration in EMSA.

Biography: Kaela Kelly is a chemistry major with a minor

in psychology from North Beach, Maryland. In the fall, she will be entering a Ph.D. program in neuroscience at the University of Alabama at Birmingham.



NICHOLE KENNEDY

Project and Academic Advisor: Laura van Assendelft
Type of Project: Senior Project
Presentation Category: Presentation with multi-media support
Title: Hispanic Voting Behavior and Cross-Pressure

Abstract: The Census Bureau has projected that the Hispanic population will reach 30% of the United States population by 2050, a significant influence that American politics has already begun to see. Ideologically, Hispanics have traditionally aligned on the conservative side of the spectrum in public opinion polls. Yet, voting patterns indicate that Hispanics, fairly consistently, veer liberal. Thus, Hispanic cross-pressure manifests itself in vast historical voting consistency for the Democratic Party, even though their issue stances might align them with the conservative Republican Party. National Election Study data provides a historical, quantitative approach for the 2000, 2008, and 2012 elections. Additionally, this analysis is supplemented by a more qualitative analysis of the 2014 Congressional results by looking at exit polls and approaches taken by each party to court the Hispanic vote. The analysis attempts to shed light on the nature of possible cross-pressures, the strategies each party has used to court the Hispanic vote, and why there has been no consistency in Hispanic voting patterns.

Biography: Nichole Kennedy, of Tappahannock, Virginia, is majoring in political science with a double minor in business management and peacemaking and conflict resolution. After graduation, Nichole plans to work for Teach For America in the Eastern North Carolina region, teaching special education K-12.



BRITTANY KONDRATENKO

Project and Academic Advisor: Laura van Assendelft
Type of Project: Senior Project
Presentation Category: Presentation with multi-media support
Title: Gerrymandering and Financial Competition in the 2014

Midterm Elections

Abstract: Although gerrymandering has a heavy stigma of being undemocratic, gerrymandering is still widely

practiced by district line drawers in the United States today. Typically gerrymandering has been used to give certain groups (i.e. political parties, African-Americans, immigrants, etc.) either an advantage or disadvantage in winning districts, making those districts safe for either the purposefully included or excluded group. Candidate spending has typically been an indicator of how competitive a district is. This project aims to examine to what extent financial competition was evident in heavily gerrymandered districts for the 2014 election cycles.

Biography: Brittany Kondratenko, from Culpeper, Virginia, received a Bachelor of Arts with distinction in political science in the fall of 2014. She will attend the College of William and Mary's law school in the fall to study tax law. She is a member of the Phi Beta Kappa and Pi Sigma Alpha honor societies.



KATHRYN LAFLIN

Project Advisor: Daniel Métraux

Academic Advisor: Cara Jones

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: Genocide: A Crime Without Conviction

Abstract: Genocide has occurred throughout human history, yet it has only had a name for less than a century. Since then, the acts have continued to occur, and many domestic and international organizations have attempted to prosecute genocide, yet few have been successful. The International Criminal Court (ICC) was formed to prosecute crimes against humanity, but only two people have ever been convicted in the history of the court. This presentation will analyze the structural weaknesses and barriers to the ICC that prevent it from adequately convicting these crimes. Through a Mills comparison analysis of the Omar Hassan Ahmad al-Bashar and the Uhuru Muigai Kenyatta tribunals, this presentation will show the structural weaknesses of the ICC and how they prevent the ICC from convicting those brought forth. This presentation will further explore alternative methods to bring those charged with genocide, or crimes against humanity, to justice.

Biography: Kathryn Laflin is a double major in political science and international relations, with minors in leadership and peacebuilding and non-violent conflict resolution. Her hometown is Austin, Texas. In the future Kathryn plans to pursue a career in international development.



LESLIE PITTMAN

Project and Academic Advisor:

Lise Keiter

Type of Project: Senior Project

Presentation Category:

Performance

Title: Vocal Selections: Exploring the Theme of Love

Abstract: This program of vocal

music includes selections from several eras. Baroque, Classical, Romantic, and jazz styles are featured in the songs of Mozart, Handel, Viardot, and Gershwin. Despite the differences in each piece, they are united by a common theme of love. Strauss's "Alphorn" expresses tortured love, and the constant reminder of its bittersweet memories. Mozart's "Un moto di gioia," "Oiseaux si tous les ans," and "Weigenlied" reveal the joys of love, fleeting infatuation, and love for children. Spanish-French composer Pauline Viardot laments the uncertainty of relationships in "Hai Luli," which also expresses the excitement of being young and flirtatious. Gershwin's jazz-influenced compositions share longing for someone with whom to share love and life, and lament over lost-love. People experience love in many different ways, but music creates a way to enjoy the journey together.

Biography: Leslie Pittman is originally from Baltimore Maryland, and Spring Grove, Pennsylvania. During her college career, she participated in Mary Baldwin's plays and musicals, Choir, and Baldwin Charm. During her senior year she served as Choir President and acted as missions coordinator for Baldwin Christian Ministries. After graduation, Leslie plans to continue performing and has applied for a songwriting internship in an urban worship setting.



MAKENNA PLUM

Project Advisor: Paul Deeble

Academic Advisor: Eric Jones

Type of Project: Senior Project

Presentation Category: Poster

Title: Antibiotic Resistance of *Escherichia coli* in Fecal Samples from Dairy Cattle

Abstract: Antibiotics are given to

livestock animals such as dairy cows to promote growth and for therapeutic and prophylactic purposes. Overusing and misusing an antibiotic can result in bacteria such as *Escherichia coli*, which live naturally in the guts of animals, becoming resistant and even transferring its resistance plasmids to other potentially pathogenic bacteria in the gut. This research was conducted to determine whether fecal *E. coli* isolated from dairy cattle that had been treated with the antibiotic tulathromycin show

antibiotic resistance. Tulathromycin works by binding to a ribosomal subunit, thus preventing protein synthesis. In this study, fecal *E. coli* were compared to lab strain *E. coli* that were never exposed to tulathromycin. This comparison was done by plating both fecal and lab strain *E. coli* on plates containing tulathromycin. Resistance, indicated by more growth in the fecal *E. coli* than in the lab strain *E. coli*, was determined. If resistance is found on a small-scale farm like the one used in this study, then larger farms with livestock animals could potentially have bacteria that are resistant to antibiotics, leading to pathogenic bacterial antibiotic resistance.

Biography: Makenna Plum is a biology major from Danville, Virginia. She is currently the president of the Student Alumnae/i Relations Society. After graduation, Makenna plans to receive her teaching license for secondary education.



VIRGINIA POPE

Project and Academic Advisor:

Jane Pietrowski

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: Music Unbundled

Abstract: While the music industry

has traditionally been resistant to change, technology serves as the major factor forcing the industry to change. Technological advancements in the last twenty-five years have forced the music industry to enter the digital age and rethink the way it does business. Data collected by the International Federation of the Phonological Industry (IFPI), show a clear decline in revenues worldwide and a shift away from bundled physical formats towards unbundled digital formats. While there is a large amount of variance between countries, digital revenues make up over a third of global revenue from music sales today. The digital era of music has and will continue to lower the barriers to enter the market, through digital retailers that allow artists to bypass recording labels as well as allowing consumers to access music whenever they want through streaming services such as YouTube and Spotify.

Biography: Virginia Pope double majored in international economics and business and Asian studies. Her hometown is Chester, Virginia. She graduated in January, 2015, and plans to pursue a career in data analysis.



ALANA RISTER

Project Advisors: Nadine Gergel-Hackett and Peter Ruiz-Haas

Academic Advisors: Peter Ruiz-Haas and Kathy McCleaf

Type of Project: Senior Project

Presentation Category: Poster

Title: Development of a Practical, Low-Cost, Portable Water

Purification System via Titanium Dioxide Thin Films

Abstract: Pollution in water can be very harmful to humans, animals, and the environment. One type of water pollution is organic pollution, in which organic compounds such as endocrine disruptor compounds or toxins pollute the ground water. It is hard to remove organic pollution from water; however, one way is by photocatalytic degradation. Titanium dioxide is a photocatalyst agent that can be used to increase the rate at which organic compounds degrade in water. For this study, the effectiveness of titanium dioxide degradation was investigated by using methylene blue as a model compound. To develop an effective, practical water purification system, thin films of TiO₂ were deposited on three different types of containers: polystyrene petri dishes, high density polyethylene bags, and soda lime silica petri dishes. In addition, to improve reliability, the number of drops of TiO₂ sol, the optimal spin speed of the sol, and irradiation exposure time were investigated. Overall, the TiO₂ thin films successfully decreased the methylene blue in the water in all containers comparable to the degradation reported in the literature. The optimal processing conditions for the most efficient TiO₂ thin film was also established at 20 drops with a low spin speed.

Biography: Alana Rister is a chemistry and sexuality and gender studies double major from Mobile, Alabama. She is an active member of the Virginia Women's Institute for Leadership and was also elected to Phi Beta Kappa. After graduation in May of 2016, she wants to pursue a Ph.D. in chemistry.



N. LYNNAE SAUER

Project and Academic Advisor:

Amy Diduch

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: To Buy or Not to Buy? International Comparisons of

Consumer Preferences for Environmental Goods and Policy to Influence Preferences

Abstract: This senior project considers the effects of environmental degradation on consumers' preferences for

environmental goods. Recent research has shown that pollution increases with income. However, more developed countries also tend to have stricter environmental regulations. This project employs consumer choice theory to analyze how consumers will choose to divide their consumption between two normal goods: environmental goods and all other goods. An empirical data analysis utilizing both the Environmental Performance Index, which shows the status of environmental quality, and the Greendex, which shows consumer preferences, indicates that there is a significant negative relationship between the condition of the environment and consumer preferences for environmental goods. Through the use of policy, both consumer preferences and goods production can be altered to create a more sustainable goods economy.

Biography: Lynnae Sauer is an economics and mathematics double major with a minor in peacebuilding and conflict resolution. Her hometown is Linn Creek, Missouri. In the fall, Lynnae plans to travel to Germany where she will begin a Master's degree program in economics.



ASHLEY SHOELL

Project and Academic Advisor:

Kathy McCleaf

Type of Project: Special Project

Presentation Category: Poster

Title: Preliminary Results of the Contributions to Academic Success of Non-Caucasian Sexual Minorities

Abstract: After collecting data using an online questionnaire, the researchers conducted a qualitative analysis on the narrative responses of 79 non-Caucasian identified sexual minorities and examined the resiliency factors that respondents identified as having contributed to their academic success. Preliminary results identified the emergent themes that contributed to academic success as follows: seeing education as an opportunity to achieve goals; personal or internal motivation; credit to others; institutional structure and support; social community; external pressure; and studentship skills.

Biography: Ashley Shoell is a social work major with a minor in sociology and a minor in sexuality and gender studies. Originally from Silver Springs, Nevada, she now calls the Blue Ridge Mountains home. She will be working on a graduate degree starting in the fall.



AMANDA SLEMAKER

Project and Academic Advisor:

Joseph Sprangel

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: The Atlantic Coast Pipeline and Augusta County's Future

Abstract: Natural gas is becoming the predominantly consumed fossil fuel for electricity generation in the United States. The country's infrastructure is undergoing rapid expansion to aid in transporting the recently discovered Marcellus Shale natural gas. In order to further assist in the transportation of the shale gas, Dominion Power, along with three other energy companies, is proposing to build a natural gas pipeline. The proposed routing of the Atlantic Coast Pipeline is generating a great deal of concern and controversy for many individuals living in Augusta County. This paper evaluated the effect that this pipeline will have on the county through an in-depth Triple Bottom Line analysis. This research measured the economic, environmental and social impacts of the pipeline being routed through Augusta County. The result of the analysis, conducted with the aid of Federal Energy Regulatory Commission guidelines, has determined that the construction of this pipeline will generate a strong economic benefit for the county. While there are many real and presumed negative factors in the societal and environmental areas of the Triple Bottom Line analysis, the research outcome shows that this pipeline will in fact be an overall tremendous asset to the county.

Biography: Amanda Slemaker is a business major with a minor in management. Her hometown is Montpelier, Virginia. She has worked as an active student leader as well as assisted in research with Dr. Joseph Sprangel. In the fall, she hopes to be pursuing a career in the energy sector.



ELIZABETH SUCHANIC

Project Advisor: Joseph Sprangel

Academic Advisor: Claire Kent

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: Wilmington University: Strategic Expansion of Online Partnerships

Abstract: Wilmington University, a private non-profit university in Delaware, has a growing online student

population. The school has interest and adequate infrastructure to expand its online offerings through additional strategic partnerships with community colleges offering fully online programs. The purpose of this research study was to identify and rank the community colleges in the United States to determine institutions with the greatest potential to partner with Wilmington University. Using data from the Integrated Postsecondary Education Data System (IPEDS), these institutions were ranked based on a weighted average of the institution's enrollment potential, program disciplinary alignment, size of online student population, and geographic region. An in-depth examination was conducted of the 10 highest-ranking institutions. Wilmington University intends to use the research study results as a basis for approaching the identified institutions to determine their interest in developing fully online partnerships that include articulation and dual admission.

Biography: Betsey Suchanic is a junior from Garnet Valley, Pennsylvania, double majoring in marketing communication and studio art with an emphasis in graphic design. Betsey will be spending her summer completing a fellowship with New Sector Alliance in Boston before returning to complete her senior year at Mary Baldwin College.



HILARY THERIT

Project and Academic Advisor:

Jenna Holt

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: Differing Forms of Music and its Effects on Symptoms of

Depressed Mood in College-Aged African American and Caucasian Women

Abstract: Numerous studies support music therapy's significant positive impact on both physical and psychological problems. Specifically, music has been scientifically proven to decrease levels of depression in both men and women. The purpose of this study was to determine if differing forms of music, specifically rock vs. relaxing, have differing effects on symptoms of depressed mood in college-aged African American and Caucasian women. The participants were 38 female college students between the ages of 18-23. We found a significant interaction among depression, race, and activity $F(2,32) = 3.286, p = .05, n2=0.33$. However, post hoc tests revealed only one meaningful significance, between the post scores of Caucasians who were exposed to rock music and the post scores of Caucasians who were in the control group, journaling $t=13.075, p=.05$. A larger sample size would have been needed to see if there were any

more significant differences between the experimental groups.

Biography: Hilary Therit is a psychology major from Hanover, Pennsylvania. Hilary was accepted to Marymount University's Master of Arts Counseling program and will be starting graduate school there in the Fall of 2015.



SIERRA TRENT

Project Advisor: Eric Jones

Academic Advisor: Paul Deeble

Type of Project: Senior Project

Presentation Category: Poster

Title: The Effects of Clifbar

Nutritional Supplements vs.

Larabar Nutritional Supplements

on Salivary pH and Glucose levels

in Athletes During and After Exercise

Abstract: High Glycemic Index (GI) foods produce a more a rapid digestion rate than low GI foods. This is important to athletes because the GI level determines the amount of carbohydrates available for an athlete's body to pull from. Due to strenuous exercise performed by athletes, dehydration can affect the salivary pH in athletes, which leads to their higher rate of teeth erosion. This study was conducted to determine the effects of Larabar supplements and Clifbar supplements on salivary pH and glucose levels in athletes during and after exercise due to their varying levels on the Glycemic Index (GI). Fourteen participants exercised on an elliptical for three 30-minute intervals separated by ten-minute breaks. Glucose and salivary pH were measured after each 30-minute interval. A Two-Way ANOVA statistical test showed that there was no significant difference seen in the effects of nutritional supplements on salivary pH levels and glucose levels.

Biography: Sierra Trent is a biology (biomedical emphasis) major with a minor in women's studies. Her hometown is Madison Heights, Virginia. In the summer, she will be taking classes to become a certified nursing aide and fulfill clinical hours required for the physician assistant Master's program. In the fall, she will be taking classes to complete her graduate school requirements. Sierra plans to attend a physician assistant program in the fall of 2016.



ANAHI TRUJILLO-CAMORLINGA

Project and Academic Advisor:
Brenci Patiño

Type of Project: Senior Project
Presentation Category:
Delivered paper

Title: Violence, Disequilibrium, and Destruction: The Impact of

the Mexican Revolution in the Works of Juan Rulfo

Abstract: The Mexican Revolution had a major impact on various aspects of world history, most notably on the Mexican literature of the early twentieth century. The Mexican Revolution, which began as a revolt against the Mexican dictator Porfirio Diaz, resulted in many changes to the political and economic sphere of Mexico. However, although there were many social and economic advances as a result of the revolution, there were also many drawbacks. Writers such as Juan Rulfo set out to show the consequences that the revolution had on the lives of the Mexican people, as well as the impact it had on Mexico as a whole. In his collection of short stories *El Llano en Llamas*, Rulfo paints a picture of the lives of common people who lived during the aftermath of the revolution. Two stories in particular, "They Gave us the Land" and "We're Very Poor," do a remarkable job in showing the effects of the revolution on the experiences of four men and the life of one family, respectively. After analyzing both of these stories individually, I concluded that the author uses similar rhetorical devices, such as a simple tone of narration, vivid descriptions of the setting, and a rich implementation of natural symbolism, specifically of water. Said devices, coupled with structural violence in regards to social status and disequilibrium of nature, work to demonstrate the immediate impact of the Mexican Revolution. Rulfo represents the concerns and issues of the time period as he takes a broad issue, the overall impact of the Mexican Revolution on Mexico, and presents stories that are accessible to the common reader.

Biography: Anahi Trujillo Camorlinga is a Spanish major with minors in English and education, and she was elected to Phi Beta Kappa. Her hometown is Buffalo Junction, Virginia. In the fall, she will be entering the graduate program for education here at MBC. After graduating with her Master's in Teaching in Spring 2016, Anahi plans on being a translator and a high school Spanish teacher.



KRISTIA VASILOFF

Project and Academic Advisor:
Louise Freeman

Type of Project: Senior Project
Presentation Category:
Presentation with multi-media support

Title: The Effect of Lupron on the Physical and Neurological

Development of Prepubescent Female Mice

Abstract: Pharmacological delay of puberty is sometimes used for transgendered youth who are not old enough to undergo sex reassignment but are nonetheless distressed by puberty. Leuprorelin (Lupron) is a gonadotropin-releasing hormone (GnRH) agonist currently used as a puberty blocker for transgender individuals, but its long-term effects have not been categorized.

To observe the effect of Lupron on prepubescent mouse development, one group (N=7) was treated with .012ug[lupron]/g daily. Mice were tracked with daily weight measurements and periodic neurological exams to determine if 1) this Lupron dosage delays puberty and 2) if there are other effects of the drug on growth or development. Two-way mixed design ANOVA found that treated mice gained weight in a similar manner to untreated controls (N=14; F=.072, p=.793) and scored lower on a sensorimotor exam after 11 days of drug treatment (N=14; F=253, p<.01). This suggests that Lupron may be stunting neurological development. Animals were also tested for social anxiety and aggression differences.

Biography: Kristia Vasiloff is a double major in biology and psychology. Her hometown is in Chester, Virginia. She will be entering in the neuroscience Master's program at the University of Hartford in the fall of 2015.



ANALISSE VASQUEZ SOTO

Project and Academic Advisor:
Steven A. Mosher

Type of Project: Senior Project
Presentation Category:
Presentation with multi-media support

Title: A Case Study of Administration and Design:

Quality of Life and Care Based on Healing Environmental Design in Long-Term Care

Abstract: In the past, health care environments were designed to mainly benefit physicians and nurses. As research and quality efforts have progressed, the central focus on environmental design became directed to patients and families. Analisse conducted a research

project to analyze whether healing environments have an effect on resident quality of life and care after transitioning from an institutional setting. The focus of the project was on assessments of resident and staff members in a skilled nursing facility and a long-term care home. Results indicated that there are both positive and negative effects on resident quality of life and care after transitioning from an institutional design setting to a healing environment design setting.

Biography: Analisse Vasquez Soto is a health care administration major with an emphasis in public health and a sociology minor. She was born in Bolivia and her hometown is Falls Church, Virginia. After graduating, she will obtain a LTC license to be an administrator in long-term care. She also looks forward to attending a Master's in Health Administration graduate program in Spring 2016. With a strong passion for healthcare, she looks forward to becoming a leader in her field.



SHATIRA WALLER

Project Advisors: Mary Hill Cole and Amy Tillerson-Brown

Academic Advisor: Edmund Potter

Type of Project: Senior Project

Presentation Category: Presentation with multi-media support

Title: "Abandon Hope All Ye Who Enter Here": Waste, Sanitation, and Workhouses in Nineteenth Century England

Abstract: In order to escape the horrors of the slums and pangs of hunger, England's vagrants often escaped to workhouses. Workhouses, typically two-story structures with the capacity to house from 200-500 people, were originally formed under the Old Poor Laws in 1601 to provide relief to the pauper population. The "indoor" relief provided when paupers entered the workhouse granted them a basic meal, a place to stay, and, in return, the paupers earned their keep by performing assigned tasks that ranged from breaking stones to grinding animal bones into dust. By the early nineteenth century, the benefits of indoor relief and the freedoms associated with low surveillance allowed criminal paupers to take advantage of the workhouses. Edwin Chadwick, who was appointed as the Assistant Commissioner on the Royal Commission of Inquiry on the Poor Laws in 1832, believed that many of the paupers in the workhouses were abusing the system, since they entered and re-entered the workhouses as they desired. His suggestions in the Parliamentary Report of 1834 called for the paupers to receive harsher work and less food in an effort to dissuade "the undeserving poor" from abusing the system.

This approach, in conjunction with the poor water quality, rampant diseases and lack of a sanitation system, contributed to the increased death rate in nineteenth century England. As a result, Parliament passed the Public Health Act of 1848 — not because of genuine concern for the health of the working-class, but because the increased death rate would assuredly slow rates of production in the newly industrialized country.

Biography: ShaTira Waller is a history major from Williamsburg, Virginia. She has worked on campus as a peer adviser and teaching assistant since her sophomore year. ShaTira's plans for the fall are to work with AmeriCorps to assist college freshmen to successfully complete their first year.



TIFFANY WATERS

Project Advisor: Janna Segal

Academic Advisor: Terry Southerington

Type of Project: Senior Project

Presentation Category: Performance

Title: Using Bogart's Viewpoints Method to Physicalize Character

in Mary Zimmerman's *Metamorphoses*

Abstract: Anne Bogart is the founder of SITI Company and author of *The Viewpoints Book: A Practical Guide to Viewpoints and Composition*. The Viewpoints method delineates physical components of time and space to be used by actors in their creation of character for both realistic and expressive forms of theatre. Tiffany applied the Viewpoints method in a Mary Baldwin College Theatre production of *Metamorphoses*, by Mary Zimmerman. Viewpoints has given Tiffany a vocabulary to articulate clearly her character's onstage movements and to analyze images that further enhance her understanding of the characters she portrayed.

Biography: Tiffany Waters is a theatre major from Front Royal, Virginia. She has been a performer or crew member in thirteen Theatre Department productions in her three years as an undergraduate. She plans to apply to MBC's Shakespeare and Performance Program with hopes of attending this fall.



CHALIA WELLS

Project and Academic Advisor:

Daniel Métraux

Type of Project: Senior Project

Presentation Category:

Delivered paper

Title: The Metamorphosis of 21st Century Japanese Men: How the Rejection of the

Salaryman Masculinity Brought about the Emergence of *Soushokukei Danshi*

Abstract: Japanese men in the 21st century are going through a change in masculinity that can be considered both good and bad for Japanese society. The members of this “new breed” of men are focused on themselves in terms of fashion, work and relationships and are creating a life worth living on their own terms. “Soushokukei danshi,” or herbivorous men, is the term to describe men who have rejected the salaryman masculinity after seeing undesirable effects on their own fathers’ lives. Most of the soushokukei danshi’s fathers were salarymen during the time of extraordinary economic growth from the end of the 1940’s to the end of the 1980’s and were praised because of their dedication to the company and work effort. With the coming of the Heisei period (1989-present), which marked major economic decline, many people in Japan started to look at salarymen in a negative light. This study examines the contrasts between salaryman masculinity and *soushokukei danshi* and what these and other conceptions of masculinity mean for the future of Japan.

Biography: Chalia Wells is an Asian studies major with a minor in anthropology. Her hometown is Waldorf, Maryland. She has worked closely with international students as a peer advisor and international ambassador this past year. Chalia hopes to attend Lehigh University next spring to study comparative and international education.



BETHANY ZAIMAN

Project and Academic Advisor:

Abby Wightman

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: She Finds Her Voice: Challenging Church Gender Roles

and Purity Culture

Abstract: In recent years, there has been a large wave of people challenging and/or leaving the North American Evangelical Church. Many of these people have congregated online. They frequently discuss the factors that

have most strongly influenced their decisions to critique their former Church structures. Many of the conversations have centered on challenging Evangelical gender roles and purity culture, particularly ideas surrounding modesty and women in leadership. Bethany conducted a content analysis and semi-structured interviews to explore the reasons why so many people confront these Evangelical norms. The results indicate that this confrontation is part of a larger effort to redefine collective ideas of sacredness and community.

Biography: Bethany Zaiman is an anthropology/sociology major from Highland, New York. She plans to pursue a career in medical anthropology after graduation.



TOBY E. ZIEMBA

Project and Academic Advisor:

Daniel Métraux

Type of Project: Senior Project

Presentation Category:

Presentation with multi-media support

Title: Syrian Refugee Crisis: Resettlement and Hope

Abstract: According to António Guterres, the U.N. High Commissioner for Refugees, the Syrian refugee crisis is the largest humanitarian crisis of our era. There are over three million refugees living in the countries neighboring Syria, as well as over six million people who are still living in Syria, desperate to escape. The bulk of the population burden is falling on the developing countries of Jordan and Lebanon. These two countries are about to crack under economic, political, and social pressures, and the developed nations of the world, including the United States, need to step in and offer resettlement opportunities to refugees. If the refugee population is shared worldwide, there will be smaller repercussions for each individual nations and the refugees will have successful futures for themselves and their families.

Biography: Toby Ziemba is a triple major in international relations, art history, and studio art with an emphasis in photography and mixed-media installations. She also has a minor in Asian studies. After graduating this year, Toby will return to her home state of North Carolina before traveling to Poissy, France, in August, where she will spend a year as an au pair.

MAY TERM ABROAD CAPSTONE NOMINEES

The following students were nominated for the Capstone Festival but are unable to participate because they are on a study abroad program during May Term. We include their information here in recognition of their achievement and commitment to international awareness.

SARAH E. FINNEGAN

Project Advisors: Mary Hill Cole and Amy Tillerson-Brown

Academic Advisor: Mary Hill Cole

Type of Project: Senior Project

Title: Body Snatchers: Modern Day Heroes or Past Crooks?

Abstract: Nineteenth-century body snatching in Edinburgh, Scotland, paved the way for medical advancements in safer surgical practices. Some of these safer practices include Robert Liston's swiftness in pre-anesthetic operations, James Young Simpson's chloroform operations, and Robert Lawson Tait's medical advancements in obstetrics. Body snatching provided these former medical students a way to study anatomical dissection, which was essential in order for them to develop their medical breakthroughs. Thus, early medical schools were in high demand for corpses. However, the supply of cadavers was limited under the Murder Act of 1752, as the act only permitted medical institutions to purchase executed criminals for dissection. This is why Scottish medical schools, specifically Barclay's Medical College and the University of Edinburgh, were forced to obtain bodies through the desperate measures of body snatching. Had these institutions not acquired corpses through such means, it is improbable that nineteenth-century Edinburgh would have leaped forward in medical innovations.

Biography: Sarah Finnegan is a history major with a minor in education. She is from Buffalo, Minnesota and is in the BA/MAT program at Mary Baldwin College. Upon receiving her MAT in the spring of 2016, she plans to teach middle school social studies.

SUTTON HASTMAN

Project and Academic Advisors: Sara Nair James and Peter Ruiz-Haas

Type of Project: Senior Project

Title: Yellow Lake Photolysis: Discoloration in Paintings

Abstract: Seventeenth-century Dutch floral still life paintings became discolored over the centuries, with green leaves turning blue due to the photolysis of yellow lake pigments. During the seventeenth century, scientific discoveries, especially in the Dutch Republic, sparked the importance of naturalism by compelling scientists to publish their research with naturalistic imagery and, consequently, influencing artists to capture nature with microscopic detail. In order for artists to capture nature, they needed a bountiful palette that included yellow lake to create green, since the availability and appearance of green was limited to four pigments. In this project, a historical analysis revealed the importance of yellow lake: the aesthetics of the pigment, the limited availability of green pigments, and the importance of naturalism. Then a scientific analysis examined how yellow lakes were created historically using weld, buckthorn, and fustic and how they discolor under fluorescent light. Two types of samples were prepared: the pigment in oil and the pigment in oil with a top layer of varnish. The discoloration of lakes over time was quantified with an Ocean Optic reflection and backscattering probe and SpectraSuite® color measurement equipment. Experimentation resulted in a visual discoloration of all the pigments and in quantified data of the absorbance of yellow decreasing at various rates for each pigment.

Biography: Sutton Hastman is a double major in art history and chemistry from Buckhannon, West Virginia. She plans to attend graduate school in New York to study art conservation.



Congratulations to all students participating in the
2015 CAPSTONE FESTIVAL

Nomination to the Capstone Festival is in itself a high honor. To recognize extraordinary achievement, top honors will also be given in each presentation category. Panels of three judges will evaluate the creativity, challenge, and execution of the projects as well as the ability of the presenters to communicate the content and significance of their work to a general audience. Top honors awards are accompanied by a cash prize of \$150.

